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Education for Freedom in a Free Society

STERLING M. McMURRIN

Manpower for the Marine Sciences

H. HAL VISICK

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Office of Education

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Education for Freedom in a Free Society

An address by Sterling M. McMurrin, U.S. Commissioner of Education, given on March 26, 1962, before the Conference on the Ideals of American Freedom and the International Dimensions of Education convoked by the U.S. Office of Education and held in Washington, D.C., March 26–28.

WHEN WE ask the question of the responsibility of our schools in the matter of freedom, we confront a primary task of education, for quite certainly among the purposes of education none is more basic than the understanding, appreciation, criticism, and perpetuation of the culture; and among the defining properties of our culture, none is more central than freedom and none is more pertinent to the large issues that now occupy us. The problem is not whether education has responsibilities here, but rather what they are and how they can effectively be mounted. The ideal of freedom pervades the whole structure of our personal and corporate life, and it falls therefore upon all the institutions of our society, singly and collectively, to protect and cultivate it and to keep it a viable quality of our culture. The specific task of education must be identified within the context of the primary function of education, which is the achievement and dissemination of knowledge, the cultivation of the intellect, and induction into the uses of reason.

Our people have a firm tradition of respect for reason and for what reason entails—knowledge, evidence, and a careful assessment of the pros and cons of every issue. This is not to say that we have always behaved with reasonableness in the past or to guarantee that we shall avoid irrational attitudes and conduct in the future. It is to say that our civic passions are quite commonly responsive to the persuasions of evidence and that we have built into our habits of thought and action those deterrents and inhibitions that in part account for the stability of a people whose public life is a scene more of discussion, deliberation, and effective compromise than of emotional extremes and arbitrary decision.

That we have such extremes is all too evident. And they do not all belong to the past, for some are with us now. We can look in many directions and see evidences of irrational behavior of all kinds, in public and in private life. In some instances the matter is trivial, or at least of no general concern. In others something very real and very precious may be at issue. Often there is at least a loss of the composure and self-possession that are among the chief adornments of a mature society, a loss of the serenity and self-respect that are the ground of the dignity of a civilized nation.

The commitment of our public life to reasonableness is of long standing and runs very deep. It perhaps is not unrelated to the fact that the large events of the founding of the Republic belonged to the American Enlightenment, and that some of the founders were among the best specimens of that age that produced specimens of a very high order, who believed that tyranny was the product of superstition and ignorance, that freedom was the fruit of knowledge and reason. But far beyond that, the roots of our tradition were in the classical doctrine that man is the rational animal, and that his ultimate good lies in the cultivation of his reason, a doctrine that has had a long and illustrious history. It was the foundation of the Greek conception of the virtuous life and the good society, and the basis of the stoic philosophy that gave structure to Roman law and order. It was Christianized as the basic tenet that the rationality of man is the image of God. And it became the chief ground for modern science and for the foundation of modern humanism with its liberal doctrine of man and its optimistic conception of human history.

Now among all the modifications of recent decades in the intellectual, moral, and spiritual life of the Western World, none has been more radical or far-reaching, and none more ominous in its prospect than the decline of this belief in the rationality of man and the loss of the faith in his sure determination of his future. That this decline, which has

affected secular and religious thought alike, and has touched the political life of nations and the personal life of individuals with doubts, fears, and anxieties, has not cast its blight upon us in the same degree as on some others is due in part to the fact that until now, at least, we have not suffered the frustrations, defeats, and tragedies that they have known.

But the threats of irrationalism hang over us and the events of recent years are an ominous warning that even here the force of reason can fail and men can be moved more by emotion and passion than by knowledge and wisdom.

Yet where we are guilty of such behavior, and suffer the losses that it entails, it is within the context of a general commitment to reasonableness that sooner or later recalls us to our senses, restores our balance and judgment, and leaves us embarrassed, chastened, and perhaps a little wiser. It is this precious commitment to reason, which is central to so much that is of intrinsic worth not only in our intellectual pursuits but as a quality of our moral and spiritual life and upon which so much depends in our practical affairs, that is entrusted to our schools. Whether they cultivate respect for reason in their students, not simply in some but in all, by instilling in them a passion for knowledge and for the quest for knowledge and, in so doing, affect the whole character of our society, will decide their success or failure in the management of this inheritance.

Such a thing as our sense of obligation to knowledge and reason is quite properly seen as an inheritance, for it is something that cannot be created or established in a day. It is not something that can at will be put on or taken off, or be imposed artificially on others, or be legislated into or out of existence. It has evolved through the centuries with the culture, is transmitted by it from generation to generation, and is indeed not simply a part of the culture but an essential quality of its very nature. If under pressures of whatever kind our people were to abandon their basic trust in knowledge and reason, the culture in which we move and flourish, which is in our thought and action, and which at once determines and is determined by us, would be at its end. The future, whatever else it might be, would be a different world for us from what we now know and have known.

In this matter we have no reason to believe that our schools will not in the future prove worthy of their task. They came into being as the chief bearers of the intellectual life of our society and there is no other institution to assume the burden of their responsibilities. But our faith in the capacity of our schools to insure the future stability of our society by guaranteeing that our decisions and actions will be determined by a calm and thoughtful reliance upon knowledge and a careful examination of causes and consequences is, after all, in part a faith in our own willingness to continually examine and critically appraise our educational program at every level. It is a recognition that we have the capacity to define the basic problems that confront us at any particular time and to see clearly their relevance to the proper activity of the schools. Whether it is seen on the domestic or world front, contemporary history is moving at an accelerated pace and in the future those problems may be expected to appear in great number. In the years ahead the schoolmen, like the wicked, will have no rest.

When we turn to the issue of freedom itself, which is intricately involved with the question of reasonableness, the picture is subtle and complex. Freedom did not come in a day. Its history is long, with ups and downs and devious paths. Freedom is something that is won or achieved, that is lived through, or that is always about to be born. It is not something that is simply planned, or decided upon. It must come into being through the life struggles of a people. Clearly it cannot just be borrowed, adopted, or adapted.

But there is not just one freedom. There are many. And it is not freedom in the abstract that should concern us here, but the concrete and particular freedoms that are or should be real and viable in the processes of our society and the lives of our people—freedom to think and freedom to speak—freedom to write and to read—freedom from want, from fear, from pain—from ignorance, conformity, custom, boredom, and superstition—freedom from oppression by both majorities and minorities—freedom from the crushing weight of the state—freedom from the tyranny of the past and from every form of tyranny that can rule the mind and heart and soul of man—freedom to be in the full sense a person whose personality is individual, in whom uniqueness is encouraged and independence is real. All of these and many more are elements in what we mean by freedom, and certainly these and many more are at issue when we ask the basic questions about political, economic, and intellectual freedom.

There is much more for those who dig deeply and ask the question of the freedom of the will, with its scientific, metaphysical, theological, and moral implications. And there are matters of large practical import in the issue of the freedom of history—or better, freedom *from* history, freedom from the inexorable determinations of a purposeless fate, or from the unyielding logic of the blind mechanical forces of nature.

Now if there is anything that lies at the very heart of freedom as we know it, however vaguely and imperfectly, as an ideal of our culture, and freedom as we want to cultivate and protect it, the freedom that is so precious to us, it is the person taken as an individual. Clearly, the individual is at the very center of the meaning of freedom for us. His aims and purposes and his acceptance of responsibility are integral to freedom as a living experience. Any serious discussion of freedom and of the ways to enhance and preserve it must come to grips with the fact of the individual and the moral ideal of a society that is structured to that fact.

Here again is something that was not achieved in a day, a century, or even a millennium. The individualism that is central to so many of our judgments of value and is so commonly the foundation of our institutions, that seems so solid and entrenched, and yet at times is in precarious balance, is the product of a long and adventurous history, at least from Jeremiah and Ezekiel, who among our cultural ancestors first proclaimed unequivocally the moral responsibility of every person, to William James, who more vigorously than any other insisted upon the ultimate reality of the individual against the claims of the absolute.

No discussion of the American ideal of freedom and the American ideal of individualism can ignore the history of the impact of nineteenth century Hegelian absolutism on much European social and political theory and its eventual failure in our own country. Hegelian logic, metaphysics, and historical dialectic were imported into this country after the Civil War, but they did not take. Nor did the Hegelianism that appeared in a more academic garb around the turn of the century. It now appears that American thought and practice are and have been so inextricably involved with the particular and the individual that any world view or political or moral system that does not grant full and independent reality and the highest value to the individual will eventually be successfully resisted by the American mind. That this resistance is associated with our empirical, nominalistic, and pragmatic propensities and our suspicion of speculative metaphysics or the methodology of extreme rationalism is beside the point. The fact is that absolutistic philosophy has always had and continues to have a rough time in this country, and where Hegelianism with its ontological subordination of the particular to the absolute, and its political subordination of the individual to the State became the chief theoretical ground for Fascist, Nazi, and Communist totalitarianism, in American politics it went unnoticed and in American metaphysics it was forced to yield to the claims of the individual.

There is no American philosophy, and we may hope that there never will be, for the concept of a single intellectual system which pretends to the finished truth is contrary to our most cherished and basic intellectual ideal—that the quest for knowledge should be various and open and unending. But there clearly is what may be called a dominant spirit and temper in American thought, unquestionably deriving in part from and in turn influencing American practice, that informs the character of both metaphysics and ethics and transforms whatever else it may touch—a radical individualism that insists that reality resides ultimately in the individual as such and that the good, however else it may be described, is definable ultimately only in terms of the individual.

This individualism, which is so entirely consonant with the principles and practices normative for a democratic society, must be the keystone of any attempt to assess our institutions or judge our social arrangements, as it must be the keystone of any attempt at an interpretation of contemporary history that will give meaning to the events in our past and present. It is only on the firm ground of such individualism with all of its pluralistic implications, both theoretical and practical, that we can take our stand against the monolithic structure of the totalitarian states. It is only here that we can justify our way of life and our kind of institutions against theirs. And it is only here that we can look for increased strength for our Nation and new vitality for our culture.

There is a sense in which the task of the American school is expressed in the task of the American scholar. And his task must always be defined first by the disinterested pursuit of knowledge. Not to stand firm against whatever would compromise the

integrity of his search for truth would be to dishonor himself and to fail in a high and sacred obligation. Yet the scholar's concern is properly with the uses and abuses of knowledge, as well as with its achievement and dissemination, and with the state and character of his society and culture. His disinterestedness is his stubborn refusal to suppress the facts, to subject theory to policy, or to otherwise yield to the pressures of those who would restrain him in his pursuit of truth or would convert his abilities and efforts to unworthy purpose. It is not a denial of his obligation to serve those practical ends that are fully consonant with free inquiry and that may even be its essential condition. Certainly one of the greatest of cultural tragedies was the sterility of German learning that removed the scholarly enterprise of that nation from a genuine critical involvement with the affairs of the society and state and thereby contributed importantly to the possibility of the tyranny that was to destroy the very foundations of intellectual life. Whatever pressures may be brought upon him, the scholar must forever refuse to forfeit his role as a critic of his society, just as he must never fail to faithfully describe and represent it.

But criticism in itself is not sufficient. The meaning of education relates to the total life of the individual and its aims are directed especially and primarily to the cultivation of his intellectual capacities. But the individual cannot in fact be abstracted from his society in either the determination or the pursuit of his values, and the full purpose of education involves the strengthening and the perpetuation of the culture. The American scholar and the American school must now fully assess their responsibilities, both general and specific, and measure their resources against the large problems that now face every individual and that confront our society. Our Nation is in deadly peril and the world of our values is torn internally and threatened from without. Nothing less than our full commitment and determined effort will bring to them the strength that may mean the difference between their life and death.

In the pursuit of these large tasks we face many problems. Not the least of these lies in our general carelessness in the support of the basic branches of learning. Our large involvement in technological education is understandable, but even the progress of our technology is endangered by our too small investment in theoretical science; and our academic neglect of the humane studies and the fine arts can have a seriously damaging effect upon our culture. One of the major deficiencies in our national effort to meet the challenges before us is the almost complete failure of the American people to recognize that the strength of a nation lies in its art and music and literature, and in its philosophical sophistication and the quality of its social sciences just as much as in its physics and chemistry or its electrical engineering. When we raise the question of the survival of our Nation it is a question in proximate range of statesmanship and machinery. But when we speak of the decline or rise of our culture and the strength of the Nation for the long haul ahead, it is a question of the full cultivation of our spiritual, artistic, moral, and intellectual resources. Those who suppose that great music or great poetry or a knowledge of classical literature are not essential to not only the quality but even the survival of a nation and its culture are quite unaware of the lessons of the past.

Today we are confronted by internal forces that are already injuring the spirit and morale of our people. We have known for a long time that petty demagogues and tyrants can achieve some following in this country. But this time they are raising their heads in a shrewd and calculating manner that deceives large numbers of the unsuspecting and even promises to endanger intellectual freedom in the name of national security. Such efforts must be resisted with great strength, for the loss of that freedom would entail the loss of almost everything that is precious in the foundations of our society. Those who contribute to the destruction of freedom, whatever their purposes or intentions, assume for themselves an ominous responsibility. It is now one of the great tasks of those in academic life to stand firm for the preservation of intellectual freedom and to demonstrate by their own integrity, wisdom, sense of responsibility, and commitment to high purpose that the salvation of our Nation does not require the destruction of its own highest values.

To put it briefly, the large and continuing crisis in which we now find ourselves as a Nation and as individuals is a crisis in the liberal ideal out of which our basic values have come, and which is quite certainly at once the genius of and the finest product of western culture—the recognition of the ultimate worth of the individual person, the valuing of knowledge for its own sake as well as for its uses, the faith

(*Continued on p. 19*)

Manpower for the Marine Sciences

By H. HAL VISICK

The ocean is the last great unexplored area of our planet. We know less about its depths than we do about the surface of the moon, but we know that unraveling the mysteries of the sea will open to mankind an almost inexhaustible source of food and raw materials. Our most pressing need, however, is to gain a sufficient knowledge of the marine environment to enhance our ability to provide for the defense of our way of life and the security of our Nation.

As Chairman of the Interagency Committee on Oceanography, I share the concern for training of oceanographers expressed by Mr. Visick in the accompanying article. Mr. Visick is a staff member of the Committee. His article summarizes the problems in educating marine scientists which must be overcome if we are to move ahead through an expanding research program to effective utilization of the resources of this vast environment.

James H. Wakelin, Jr.
Assistant Secretary of the Navy for
Research and Development

THE DIFFERENCE between man's knowledge of land and his knowledge of the sea is immense. Although men have obtained food from the sea and have used the sea as a medium for transportation since ancient times, scientific study has been directed primarily at the land and its creatures.

Through ages of study and development, the land animals and plants have been domesticated, modified, and cultivated so intensively as to increase the earth's total food supply many times. The great bulk of our minerals are mined on land. The contours of the land have been carefully mapped, and travel upon and above it has been made swift, safe, and convenient. Because of our success in employing the resources of the land to meet our needs, the 70 percent of the earth's surface covered by the ocean has been largely neglected in scientific inquiry.

Under the pressure of recent events, however, science has at last turned to the sea for answers to some of the problems now besetting mankind. The most pressing of these are connected with defense. But the problems of increasing the world's food supply, of mining the sea and sea bottom, and of controlling or avoiding damage caused by tidal and storm-driven waves are increasingly gaining attention.

The need to provide the United States with the means of defense at sea has stimulated work in oceanography, the science of the sea. An extensive program of research in underwater sound has been in operation since the beginning of World War II with the objective of improving methods of detecting enemy submarines and concealing our own. Studies of currents are important in assessing the effect of radioactive pollution of the ocean as a result of nuclear explosions. Information about the subsurface currents, tides, and other seacoast features is important in planning amphibious operations. As submarines operate at ever greater depths, knowledge of the contours of submerged mountains and valleys is essential for safe operation.

The rapid growth of the world's population has also given impetus to oceanographic study. In some areas food requirements have far outstripped agricultural production. Even granting that improved methods can increase farm production, it is obvious that the world population will eventually exhaust the capacity of the land to produce food. The oceans, however, have never been scientifically farmed; only 2 to 3 percent of the world's food supply is obtained from the sea, and we are still using the hunting and foraging methods of primitive man in gathering its harvest. Even the vast resources of the sea may be exhausted if we continue to gather them so wastefully. To meet our future needs for food, we shall have to understand and regulate the life cycles of marine plants and animals—to domesticate and modify them—as we do plants and animals of the land. Efficient use of the sea may require crop rotation, mineral enrichment,

selective breeding, mechanical harvesting, and all the other techniques of modern husbandry. By such scientific methods we may very well be able to increase the yield of food from the sea to the same extent that we have increased the yield of a good farm over that of uncultivated land.

The impending exhaustion of the commercially exploitable supply of certain minerals on land is also lending urgency to oceanographic research. As we are compelled to resort to ores of low grade or to seek deposits at distant points on the globe, our attention naturally turns to the vast supply of minerals dissolved within or deposited beneath the sea, for it is reasonable to suppose that the distribution of mineral deposits in the earth covered by the sea does not differ greatly from that in dry land. When these deposits are mapped and feasible mining methods developed, our mineral resources can be greatly augmented. For example, the quantity of mineral salts dissolved within the sea is staggering. It is estimated that there are about 300 million cubic miles of water in the ocean and that each cubic mile contains 166 million tons of dissolved salts. These salts include more than half of the total known elements, although for the most part only as traces. The volume of the oceans is so great, however, that even the trace elements are vast quantities; for example, a cubic mile of seawater contains only about 200 pounds of gold, but the entire ocean holds 8 to 13 million tons. Already salt, bromine, iodine, potash, and magnesium are being recovered commercially in large quantities, but new processes must be developed before exploitation of the other minerals can be profitable.

To reduce the damage and loss of life suffered when seacoasts are struck by very high, storm-driven waves, or by tidal waves caused by earthquakes is another goal of oceanographers. Systems of seismic warning devices and wave-height telemetering buoys are being tested to develop a sufficiently early warning of tidal waves to permit evacuation of shoreside populations. In addition, oceanographers are cooperating with meteorologists in investigating methods of predicting the occurrence of storm-driven waves and thus making possible advance warning to shore stations. At the same time studies of beach structures and near-shore bottom configurations must be made to predict precise wave effects and to suggest modifications to beaches which will prevent waves from encroaching onto the land.

THE Navy, the Army Corps of Engineers, the Coast and Geodetic Survey, the Bureau of Commercial Fisheries, and other agencies of the Federal Government have been carrying out oceanographic research since the thirties, but the conception of a national effort in this science is very recent. The Interagency Committee on Oceanography, a coordinating body for all oceanographic research throughout the Federal Government, is only 3 years old. In contrast to this, a decree establishing oceanographic research as a vital part of Soviet national scientific planning was issued by Lenin in 1921, giving the Russians an almost 40-year lead. It is reported that Russia has 50 vessels carrying out research. Although there is no reason to believe that Russia has surpassed us in actual knowledge of the sea, the threat exists that if our own marine research does not match theirs a significant advantage in naval warfare will accrue to Russia.

A major step toward meeting our responsibilities was taken in 1961 when the Congress responded to the President's request that appropriations for oceanography be doubled. As a result, the budget of the National Oceanographic Plan, prepared by the Interagency Committee on Oceanography, has been increased from $55 million in fiscal year 1960 to an estimated $123 million in fiscal year 1963. These increased funds have brought about a considerable expansion in oceanographic research in the colleges and universities, and as more funds become available, institutions of higher education will be asked to participate in research on a continually increasing scale.

As generous as the financial support has become, increased funds do not in themselves bring about a corresponding increase in knowledge. Highly trained scientists must be available to carry out the studies programmed. In a report of the National Academy of Sciences, *Oceanography 1960 to 1970*, it was pointed out that lack of trained personnel may become a serious bottleneck:

> Recruitment of highly trained professional oceanographers is barely adequate to meet the requirements of existing research programs in the United States, and less than adequate in the field of physical oceanography. A substantial increase in the support of oceanography will result therefore in a serious manpower shortage unless

action is taken to increase the number of students in this field.

The predicted shortage is already making itself felt, and promises to become acute unless steps are taken to train a sufficient number of people to relieve it. A study of manpower and training in the marine sciences to be published shortly by the Interagency Committee on Oceanography estimates that about 1,200 professionals are now working in oceanography and that projected programs will require as many as 5,000 by 1972.

To increase the supply of oceanographers, we must solve three problems: how to attract more students to the field; how to provide sufficient funds to allow students to study oceanography without too great a financial sacrifice; and how to expand the capacity of existing schools and to create new ones. Groups within the Government, science, and education must cooperate in dealing with these three problems.

SINCE oceanography is not a single basic science, but involves the disciplines of physics, chemistry, biology, zoology, geology, mathematics, and engineering as they apply to the sea, a student must normally have thorough training in one or more of these disciplines before he begins his study. This means that nearly all oceanographic training must be conducted at the graduate level. Such late entry into this field poses special problems in student motivation. Unless a student has already become interested in oceanography by the time he receives his baccalaureate degree, it is probably too late to persuade him to shift from his undergraduate field, in which he is already well established, to one in which he would be a relative newcomer. Consequently, students should be motivated to study marine science while they are in high school or undergraduate school. What is needed is a carefully conceived information program which would encourage young people to study the oceans. This program should not be confined to general publicity; this has already been widespread. It should show students specifically what an oceanographer does, describe for them the type and extent of research yet to be accomplished, make clear the long period of training required, and challenge students to undertake it.

Traditional information channels may be used such as lectures by scientists at schools and universities, magazine articles, and movies, but equally important is student participation in actual research and in scientific conferences. This means not only encouraging student science clubs to undertake work in oceanography, but also making available technical know-how, inexpensive instrumentation, and opportunities for supplementary study such as the summer programs for high school students sponsored by the National Science Foundation. The most valuable experience possible would be a sea voyage on a research vessel.

Some of these things are already being done on a limited scale and in a few places. A planned operation should replace these random spontaneous efforts, and some agency should be given responsibility to make certain that important sources of students are neither overlooked nor neglected.

The nature of oceanographic training makes support in the form of fellowships more necessary than in many other fields. Because nearly all study is at the graduate level, there are few or no opportunities for appointment as a graduate assistant to teach undergraduates. This eliminates a primary source of financial assistance which is available to students in other disciplines. Moreover, since the student spends a large part of his time at sea doing oceanographic research in shipboard laboratories, it is impossible for him to combine classwork ashore and laboratory work at sea. Consequently a degree in oceanography takes longer to earn than degrees in other sciences take. A recent report by the American Society of Limnology and Oceanography says that it takes an average of 7 years of study beyond the B.S. to obtain the Ph. D. degree. During this period some students will marry and have children for whom they must provide, and yet any attempt to find steady employment is thwarted by frequent absences to participate in research voyages.

The graduate student in his first or second year is particularly in need of help. Nearly all advanced students in oceanography derive some support by participating in contract research, but the new student is not sufficiently advanced to be included in professional research work and must look elsewhere for assistance. One solution would be the provision of fellowships to sustain promising students through the early years, if not throughout their entire training. In 1961–62 the U.S. Office of Education provided nine fellowships in oceanography under the National Defense Education Act. The

National Science Foundation also awards fellowships to applicants who qualify, but the number is always small. Roger Revelle, former director of Scripps Institution of Oceanography and now science advisor to the Secretary of the Interior, recently stated that lack of adequate fellowship support for students is one of the greatest deterrents to increasing the number of students in training.

Most of the scientists now engaged in oceanographic research did not study oceanography, as such, in college. They are men who were trained in specific scientific disciplines, but whose curiosity later led them to study some aspect of the ocean in connection with their particular fields. Although this system of attracting men with graduate degrees in other fields and teaching them oceanography on a practical level has met the needs of the rather limited programs of the past, it will not provide the great numbers of people who will be needed in the future.

Fifteen years ago few schools offered courses in oceanography; none granted degrees in it. Now 35 institutions teach at least 1 course in this field and 12 grant degrees in at least 1 branch. But in spite of this increase, training facilities are still insufficient for the number of qualified applicants seeking admission. Moreover, although the shortage of physical oceanographers is the most acute, it is in biological oceanography, where it is the least acute, that the greatest number of courses are offered.

THE PROBLEMS of expanding training opportunities in oceanography are old ones: lack of teachers, lack of facilities, and lack of funds. Obviously there cannot be an increase in training without first increasing the supply of available teachers. To do this, the schools must compete with all the other users of trained oceanographic personnel in the face of a developing shortage. The law of supply and demand will operate to increase the price schools must pay to recruit and retain new faculty members. However, a pool of trained persons exists which is largely untapped. Because of the great demand for research in this area, schools have accepted numerous contracts to perform research for the Government and for private industry. There are many researchers at large universities who have few or no teaching duties and possibly some of these people, if offered an opportunity, could make contributions to teaching as well as to research. By insuring that the talents of all faculty members are fully utilized schools might temporarily relieve the teacher shortage.

New schools of oceanography cannot be established as easily nor as inexpensively as schools in most other graduate science fields. To the usual expenses of classroom, laboratory, and office space must be added the cost of purchasing or leasing one or more ships and equipping them. Seagoing laboratories must be provided with instruments which can withstand shock, pressure, and corrosion, and special equipment of this type is expensive. A crew to operate the vessel and a staff to supervise student research at sea must be budgeted. All this expense must be incurred before a single student enters the institution.

Because of the high expense of ship operation, the bulk of ship time is often utilized to carry out contract research; graduate student training is relegated to a minor role. Yet it is vital to the training of an oceanographer that he receive maximum sea experience as early as possible in his career. Some assistance should be provided to institutions so that they can devote more vessel time to training students, which should be a primary objective of a sea expedition and not merely incidental to it.

A graduate program in science is normally developed from a program of undergraduate training. A few students are added at the postgraduate level and these form the nucleus of a gradually expanding graduate instructional program carried on by the existing faculty. Undergraduate programs in oceanography are rare and generally are not favored by authorities in the field. Therefore, an institution contemplating the establishment of a department of oceanography at the graduate level cannot use this normal avenue of development. Although some instruction can be provided by teachers from related fields, the majority of the faculty must be newly hired. The combination of expensive equipment and new faculty needed to teach oceanography makes it almost mandatory that a school undertake a large-scale program if it is to undertake one at all. Few institutions are so wealthy that they can do so without outside assistance.

The problems which must be solved in order to expand the Nation's supply of oceanographic researchers are numerous and complex, but they are not insoluble. It is in the national interest that researchers investigate the oceans for ways of

augmenting our food and mineral resources, and of increasing our ability to defend ourselves successfully in wartime. Therefore, the Federal Government should bear its share of the expense and effort required to increase the supply of manpower. However, the principal sources of plans and impetus must always be private citizens and institutions. The universities of America have traditionally adapted themselves to meeting the public need. It is to be hoped that they will meet the need for marine scientists as they have met other needs by the vigorous exercise of intelligence and energy.

Educational TV—1962

Excerpts from a speech by Ivan A. Nestigen, Under Secretary of Health, Education, and Welfare

Public Law 87–447, approved by President Kennedy on May 1, 1962, amends the Communications Act of 1934 to establish a program of Federal matching grants for the construction of educational television broadcasting facilities. The Department is now formulating regulations to govern the administration of the grants, and a supplemental budget request for fiscal year 1963 will be submitted to the Congress in the near future. It is expected that an appropriation will be made in the summer and that applications can be accepted in September.

Mr. Nestigen outlined the principal provisions of the act before the 32d Institute for Education by Radio-Television held at Columbus, Ohio, on May 2. For the information of educators interested in participating in this grants program, excerpts from Mr. Nestigen's speech are included below.

Congress has recognized the role that television particularly plays in our modern society, and has acted to assist the States and the people in the development and utilization of this new medium for the national educational purpose and interest, through the passage of "An Act To Amend the Communications Act of 1934 To Establish a Program of Federal Matching Grants for the Construction of Television Broadcasting Facilities To Be Used for Educational Purposes."

The purpose of the act "is to assist (through matching grants) in the construction of educational television broadcasting facilities." The term "construction" has been defined to mean "the acquisition and installation of transmission apparatus (including towers, microwave equipment, boosters, translators, repeaters, mobile equipment, and video-recording equipment) necessary for television broadcasting, including apparatus which may incidentally be used for transmitting closed-circuit television programs, but does not include the construction or repair of structures to house such apparatus."

The grants to be made available are to assist in the activation and expansion of educational television broadcasting stations and facilities and are intended to be applied toward the purchase and installation of transmission equipment. This will have to be spelled out more sharply and clearly in regulations, which, of course, will include consideration of the specific items and types of equipment that are listed.

The Congress has authorized $32 million for grants over a 5-year period to pay for the Federal share of the construction of educational television transmission facilities. The act provides that the Federal share cannot exceed 50 percent of the cost of any such construction project. An additional credit, not to exceed 25 percent of the cost of the construction project, may be allowed for transmission equipment which the applicant had previously acquired. No more than 15 percent of any grant may be used for the microwave equipment, boosters, translators, and repeaters which are to be used to

connect two or more broadcasting stations. Based on the authorized appropriation and the probable non-Federal share, the total expenditures for projects approved under the act are likely to be roughly $64 million over the 5-year period.

Concern has been expressed over the elimination of the grants for State studies and surveys and there has been some question as to why the responsibility for the execution of the program was vested in the Secretary of Health, Education, and Welfare. The "Statement of the Managers on the Part of the House" provides an explanation for this. The changes which were made in the House amendment, known as the Roberts bill, H.R. 132, "have the common objective of expediting as much as possible the construction of additional ETV broadcasting facilities." The compelling desire of the managers and Congress is to move as quickly and effectively as possible to establish "an adequate television system to serve the needs of all the people in the United States." And, in order to accomplish this objective, the conference agreement omitted the provisions requiring State surveys. They felt that time for additional surveys was not needed and that the time had come to take action to get "needed additional ETV stations on the air as promptly as possible." However, there is nothing to forbid such State surveys. The fact that they are not required does not mean that they would not be desirable and preferred in many States. This is a choice left to the several States to make in terms of what they believe to be their best educational interests. The compulsive feature of the survey was eliminated; the right to make a survey and develop a State plan still remains. It is the free choice of the States and those eligible for making grant applications as defined.

The "Grants for Construction" are to be submitted in the form of "projects." Applications for grants must contain such information concerning the project as the Secretary may by regulation require. And, it is here that the requirements and regulations will need to be worked out in careful detail. We are already underway with initial planning, but it will take several months to draft the forms and regulations and to give the necessary consideration to them prior to their promulgation. We will do our best to expedite and speed up the process, so that the forms will be available and applications can be submitted in as short a period of time as possible.

In general, the application must include the total cost of the project, the amount of Federal funds requested, and assurance that the applicant is properly qualified. A qualified applicant is defined as (*a*) an agency or officer responsible for the supervision of public elementary or secondary education or public higher education within that State or within a political subdivision thereof, (*b*) the State educational television agency, (*c*) a college or university deriving its support in whole or in part from tax revenues, or (*d*) a nonprofit foundation, corporation, or association which is organized primarily to engage in or encourage educational television broadcasting and is eligible to receive a license from the Federal Communications Commission for a noncommercial educational television broadcasting station pursuant to the rules and regulations of the Commission in effect on April 12, 1962.

The term "State" includes the District of Columbia and the Commonwealth of Puerto Rico. What is meant by a college or university receiving support "in part" from tax revenues will need to be spelled out more clearly in the regulations to be developed. The term "State educational television agency" means (*a*) a board or commission established by State law for the purpose of promoting educational television within a State, (*b*) a board or commission appointed by the Governor of a State for such purpose if such appointment is not inconsistent with State law, or (*c*) a State officer or agency responsible for the supervision of public elementary or secondary education or public higher education within the State which has been designated by the Governor to assume responsibility for the promotion of educational television. In the case of the District of Columbia, the term "Governor" means the Board of Commissioners of the District of Columbia. The term "nonprofit" as applied to any foundation, corporation, or association means a foundation, corporation, or association, no part of the net earnings of which inures, or may lawfully inure, to the benefit of any private shareholder or individual. And, eligibility under the FCC regulations as of April 12, is defined as follows:

(*a*) One or more duly accredited public or private educational institutions, organizations, or bodies;

(*b*) A municipality or other political subdivision which has no independently constituted educational organization;

(*c*) One or more tax-supported cultural organizations (e.g., public libraties); and

(*d*) An association of nonprofit community organizations chartered by a State to engage in noncommercial educational broadcasting. Such groups have been broadly representative of the educational, cultural, and civic groups in the community and have included public or private educational organizations or representatives.

Thus, a single nonprofit organization, unless it were an accredited educational organization or a tax-supported cultural organization, would not be considered eligible to receive a license for a noncommercial educational television reservation.

In addition, the regulations will require proof that the operation of the station and facilities will be under the control of the qualified applicant; that the funds necessary to construct, operate, and maintain the facilities will be available when needed; and that the facilities will be used only for educational purposes. The total amount of grants available within any single State is $1 million. In those States having a State ETV agency or authority, each qualified applicant for a grant, other than the agency itself, must notify the agency of its application to the Secretary, and the Secretary must notify and advise the agency of the disposition of the application. The purpose of this is to help assure proper coordination of construction of ETV facilities within States having such agencies. As in the case of State surveys, the bill does not eliminate State ETV agencies, but it does eliminate the requirement that applications must be submitted *through* such agencies. State ETV agencies and State surveys are welcome and to be encouraged; those who would prefer to work through such plans and agencies should do so, by all means.

The Secretary's approval of applications and the amount will be based on regulations to be established around the three general criteria stated as follows: (1) prompt and effective use of all educational TV channels remaining available, (2) equitable geographical distribution of ETV broadcasting facilities throughout the States, and (3) provision of ETV broadcasting facilities which will serve the greatest number of persons and serve them in as many areas as possible and which are adaptable to the broadest educational uses. These criteria, of course, will need to be developed in more detail and with some priorities established, so that the Secretary will have a sound basis for making value judgments in respect to grant approval. I am not able to give you these details as yet.

The procedure on processing grant applications calls for the Secretary to determine the reasonable and necessary cost of the project from data and information to be supplied by the applicant and by the Secretary's confirmation and to then determine the amount of the grant to be given. This amount cannot exceed 50 percent of the total reasonable cost. It could be less than 50 percent. The grant also can include 25 percent of the amount the Secretary determines to be a reasonable and necessary cost of ETV facilities owned by the applicant on the date the application is filed. This amount would vary according to the value of the owned facilities, but the 25 percent would remain as a constant percentage. However, the total amount of the grant cannot exceed 75 percent of the reasonable cost of the total project, although it could be less than 75 percent. In short, for new facilities where the applicant does not own any at the time of application, grants may be given up to but not exceeding 50 percent. And for new facilities, where the applicant owns existing facilities at the time of application, grants may be given up to but not exceeding 75 percent. Also, only 15 percent of any such grant may be used for the purchase and installation of microwave equipment, boosters, translators, and repeaters to connect two or more broadcasting stations. Once again, while only 15 percent of the grant funds may be used for such interconnecting facilities, there is no restriction or limitation on the amount of local matching funds which may be used for this purpose. The disposition of the local matching funds is always at the discretion of the applicant.

The procedure for the payment of the grant funds will be worked out in regulations to be prepared. The Government is entitled to recover its funds according to formula, if, within 10 years after completion of the project, the applicant or owner ceases to be a qualified applicant as defined or the facilities cease to be used for educational purposes. Each recipient of a grant must keep accurate records of the expenditures of grant funds. Books and records shall be available for audit and examination.

The entire program will be worked out in close cooperation with the FCC, which already has given excellent support and assistance to the Department.

And, the fact that the legislation is in the form of an amendment to the Communications Act of 1934 is evidence that Congress views this program as one designed to promote and develop "particular (educational) broadcast services within the general framework of broadcasting in the United States."

Office of Education Studies and Surveys

Cooperative Research: A 5-Year Summary

THE Cooperative Research Program administered by the Office of Education has in the first 5 years of its operation contracted for 480 projects at a total cost of $17 million. Of these projects, 460 have been carried out at 127 colleges and universities in 45 States. Other contracts are with State departments of education, local school systems, and education associations. Thus far 185 projects have been completed.

Among the projects directly related to higher education the following are included: college admission practices, college dropouts, college curricular offerings, costs to parents of college education, value changes among college students, career plans of college graduates, guidance and counseling practices, superior students, student subcultures in university environments, reasons for leaving college teaching.

The annotated list of projects is contained in *Research Projects of the Cooperative Research Program: A Five-Year Summary* (see "New Publications").

New Institutions of Higher Education

IN THE PAST 5 years, 90 new institutions of higher education have been established in the United States. Most of these are 2-year institutions, with 15 established in 1956, 11 in 1957, 19 in 1958, 10 in 1959, and 14 in 1960—for a total of 69. The other 21 institutions include 13 four-year institutions and 8 three-year or five-year institutions (2 theological schools granting the B.A. degree, 2 theological schools granting the master's degree, 3 institutions granting the masters' degree, and 1 technological institute which confers bachelor's degrees on the completion of an accelerated program).

In addition to these 90 institutions, 3 new medical schools have been established at the University of Florida, Seton Hall (New Jersey), and the University of Kentucky, and 4 new dental schools at Fairleigh Dickinson (New Jersey), Seton Hall, West Virginia University, and the University of Puerto Rico.

These data are taken from issues of the *Education Directory, Part 3: Higher Education* for the 5 years concerned.

State Legislation Relating to Higher Education

THE LEGISLATURES of 47 States and Guam meeting in regular session in 1961 considered over 2,300 higher education bills, 1,711 of which were enacted. This is a record high for State legislation relating to higher education. The report of a recently completed survey by the Office of Education includes these highlights of State legislative activity:

- During the last 3 years, State appropriations for current operations of higher institutions have grown progressively larger. In many States the increase for 1961–62 over 1960–61 was greater than the increase for 1960–61 over 1959–60. Some States increased appropriations by as much as 30.6 percent.
- Concern for building construction continues high: during 1961, 17 States enacted laws authorizing new building construction, and 39 States appropriated funds for repairs or improvements of existing facilities.
- The trend toward centralization of the financing of building projects continues, Ohio, Illinois, and Massachusetts being added to the list of States which have established quasi-governmental corporations with responsibility for capital improvements and construction.
- Thirty-six States enacted laws relating to bond issues or building construction. Comparable figures for 1959 and 1957 (other recent years in which legislative activity was high) were 37 and 27 States, respectively.
- Six States passed bills dealing with the creation of

new institutions; 28 States passed bills dealing with the expansion or reorganization of existing institutions.

- Eighteen States enacted 43 laws relating to junior and community colleges and their organization and financing. Laws concerning the establishment of branches or centers, such as in Ohio, West Virginia, and North Dakota, indicate further attention by State legislatures to expansion of higher education facilities.
- Thirteen States passed 17 laws relating to loans and student assistance programs. Most of the enactments were amendments to laws passed in previous legislative sessions.
- Nearly a third of the State legislatures enacted one or more bills relating to the organization and administration of higher institutions. Arkansas and Illinois created new commissions responsible for statewide coordination of public higher education.
- Legislative attention to statewide studies and surveys continues high: in 1961, 29 proposals of this kind were passed. Since 1957, 31 States have made provision for some type of statewide survey of facilities, finances, programs, or administration of higher education.

These data are taken from a "Survey of State Legislation Relating to Higher Education (January 1, 1961 to December 31, 1961)" conducted under the direction of S. V. Martorana and Ernest V. Hollis of the Division of Higher Education. This is the fifth in a series of surveys of State legislation and will be published by the Office of Education this year.

National Defense Education Act Notes

OE Contracts With National Cultural Center

THE National Cultural Center, Washington, D.C., is conducting a 10-month study to determine ways in which the Center can effectively use educational communications media such as TV and radio. The Office is making $28,000 available for this study under title VII of the National Defense Education Act which provides for research and experimentation in effective utilization of communications media for educational purposes.

The Center will use the facilities and services of the Ohio State University Telecommunications Center, whose executive director, Dr. Richard B. Hull, will be in charge of the project.

The study will examine existing and potential applications of the electronic media to the performing arts and ascertain various ways in which the Center might apply these media to its program. It will give special emphasis to services which could be provided to schools and institutions of higher education.

The Center was authorized by the Congress in 1958 to develop programs in the performing arts such as classical and contemporary music, opera, drama, dance, lectures, and other programs which might be made available to educational institutions and to citizens of all age groups through the mass-media.

Postdoctoral Fellowships Awarded

THE Office of Education has awarded 35 postdoctoral fellowships for intensive study this summer of Latin American and sub-Saharan African languages. The postdoctoral fellowships are being made available for the first time through the title VI language development program.

Of the 35 fellows, 15 will enroll in a 9-week intensive training program in Portuguese at the University of Texas, 12 in a 6-week program in Spanish at the University of California, Los Angeles, and 7 in Swahili and 1 in Ibo in an 8-week program at Michigan State University.

This pilot postdoctoral fellowship program is designed to provide intensive language training to increase competency in research on Latin America and Africa, in lecturing at Latin American and African universities, or in advising government agencies or educational institutions in these areas.

The award of 1,011 fellowships to graduate students of 57 modern foreign languages and related studies was made in early April (see *Higher Education*, April 1962, p. 18).

Other Program Notes

Peace Corps Budget Approved

THE CONGRESS has approved the Peace Corps budget requesting $63.8 million for training and support of approximately 10,000 Volunteers for fiscal year 1963. Of these, 2,400 will be entering training by June 30 and another 2,710 will enter training in July and August. Estimated cost will be $32.4 million. From September 1962 to September 1963, another 5,260 Volunteers will he trained at a cost of $31.4 million.

Projects now underway or firmly scheduled are limited to training Volunteers to work in 32 countries, of which 10 are in Central and South America, 10 are in Africa, 5 in South Asia, 5 in Southeast Asia, and 1 each in the Middle East (Iran) and the West Indies. Training for most Volunteers takes place partly in the U.S. and partly in the country to which they have been assigned. Twenty-one colleges and universities have trained Volunteers for a number of projects, and 16 are administering some of these programs overseas.

Of the 888 Volunteers who are now in training or overseas, the average age is 24 for men and 25 for women. About a third are women. Most Volunteers have a college degree, and about half are teachers or are preparing to teach. The number of noncollege candidates, however, is expected to increase considerably as projects are developed which call for crafts and mechanical skills, and farm experience.

NSF Announces 2,068 Awards Under 2 Fellowship Programs

THE National Science Foundation has announced, 2,068 awards to candidates from 170 participating colleges and universities under two of its programs—the cooperative graduate fellowship program and the summer fellowship program for graduate teaching assistants. Both programs began operation in 1959.

• A total of 1,200 fellowships have been awarded for 1962–63 under the cooperative graduate fellowship program. Of these, 211 are in mathematics, 287 in engineering, 458 in the physical sciences, including a number in interdisciplinary fields, 211 in the life sciences, and 33 in the social sciences. Fellows were selected from 4,118 applicants representing all 50 States and the District of Columbia. They receive a basic 12-month stipend of $2,400 from funds provided by the NSF and may in addition receive from the institution at which they hold the fellowship a stipend, at its discretion, not exceeding $1,000 a year. The institutions receive, in lieu of tuition and fees, a cost-of-education allowance of $2,000 per fellow.

This program differs from the Foundation's graduate fellowship program, under which awards were announced earlier this spring, in that it directly involves the institution in the nomination and evaluation of applicants and in the administration of the program. Thus candidates apply to, are initially evaluated by, and receive their stipends through the institution. The evaluations by the institution are reviewed by a panel of scientist-scholars appointed by the National Academy of Sciences-National Research Council, and final selections are made by the NSF.

• Of the 868 awards tenable in the summer of 1962 under the program of summer fellowships for graduate teaching assistants, 143 are in mathematics, 85 in engineering, 335 in the physical sciences, including a number of interdisciplinary fields, 261 in the life sciences, and 44 in the social sciences. Fellows were selected from 1,818 candidates representing 49 States and the District of Columbia.

Teaching assistants receive stipends, paid through the institution, ranging from $50 to $75, according to local conditions, for each week of their summer fellowship. The cost of tuition and fees is paid by the Foundation direct to the institution.

NASA Begins Training Program at 10 Universities

THE National Aeronautics and Space Administration will begin support of a training program at 10 universities next fall in an attempt to increase the supply of scientists and engineers to meet the needs of the national space effort. Each of the 10 universities, representing all parts of the Nation, will train 10 predoctoral graduate students in the first year of the experimental program.

Graduate students chosen for the NASA training program will receive stipends of $2,400 a year for 12 months' study and expense allowances up to $1,000 a year, according to the practice of individual universities. The universities will be reimbursed for tuition, fees, and other expenses involved in the program. The cost of the program for the first group of trainees will be about $2 million. In addition to its support for the university program, NASA headquarters has committed $13 million in the first 9 months of fiscal year 1962 for sponsored research at colleges and universities.

The universities are selecting candidates for the training grants on the basis of the promise they show of being able to complete their work for the doctorate within 3 years, the normal duration of the program. Grants, however, will be given for 1 year at a time and will be renewable so long as students maintain a quality of work satisfactory to the university.

Universities selected for participation in the first year of the program are Rensselaer Polytechnic Institute, University of Maryland, Georgia Institute of Technology, University of Michigan, University of Chicago, University of Minnesota, State University of Iowa, Texas A. and M. College, Rice University, and the University of California at Los Angeles.

The program will be administered by the Office of Grants and Research Contracts, Office of Space Sciences, Code SC, National Aeronautics and Space Administration, Washington 25, D.C.

NIH Reports on Medical Research Manpower

THE National Institutes of Health have estimated that an expansion of national expenditures for medical research to a projected level of $3 billion for 1970 will require a doubling of competent manpower and greatly accelerated provisions for health research facilities and equipment. In a balance-sheet report requested by the Congress, NIH indicated that needed increases in essential research manpower—physicians, scientists, and supporting workers—will not be forthcoming unless private and governmental activities aimed at enlarging the total pool of scientific and professional manpower are greatly expanded.

The report (see "New Publications"), with tables, charts, and graphs, points out that in 1954 there were about 19,000 professional workers in medical research, that in 1960 there were about 40,000, and that by 1970 about 80,000 will be required to mount a $3 billion research program in the Nation. These estimates indicate a necessity, the report says, for adding, in the present decade, about 45,000 professional medical research investigators to provide for the increase and to allow for deaths, retirements, and other causes of attrition.

The report is a part of a complete report of the hearings before the House Appropriation Subcommittee for the Departments of Labor and Health, Education, and Welfare.

Conference on Career Civil Service

THE CIVIL SERVICE COMMISSION sponsored a 2-day conference, May 4–5, at the Berkeley campus of the University of California to consider measures that the universities and the Federal Government can take to guarantee stronger leadership in the career civil service.

Specific topics of the conference were:

- The type of educational experience best suited to the needs of young career civil servants selected, under the recently announced Ford Foundation grants to the National Institute of Public Affairs, to take 1 year of graduate study at a leading university.
- How the Government can help to develop curriculums for after-hours education of Federal employees and encourage employees to take advantage of them.
- How to put to optimum use university resources for short Federal conferences on special problems.
- How the Government can help teachers of political science, public affairs, government economics or public administration keep currently informed of Government operations.
- How universities can help the Government to motivate and guide Federal employees toward useful self-development.
- Opportunities the Government can provide to faculty members and graduate students for research on public affairs.
- Reactions from Members of Congress, universities, State governments, and others to the plan, now in draft form, to establish a staff college for top-level career civil servants.

The conference was attended by representatives from the Universities of California, Oklahoma,

Southern California, Minnesota, and Washington, and from Princeton, Southern Methodist, and Stanford Universities.

Government participants scheduled to attend included: John W. Macy, Jr., Chairman of the Civil Service Commission; Artemus E. Weatherbee, Administrative Assistant Secretary of the Treasury; Edward L. Katzenbach, Deputy Assistant Secretary of Defense for Education and Manpower; Joseph Robertson, Administrative Assistant Secretary of Agriculture; Charles F. Mullaly, Director of Civilian Personnel, Department of the Army; Ward Stewart, Special Assistant to the Commissioner of Education; Leo Werts, Deputy Assistant Secretary of Labor; Robert J. Lacklen, Director of Personnel, National Aeronautics and Space Administration; Bernard Rosen, Director of the San Francisco Civil Service Region; J. Kenneth Mulligan, Director of Career Development, U.S. Civil Service Commission; and Edward A. Kieloch, Director of Educational Resources, U.S. Civil Service Commission.

Award of NATO Fellowships in Science

THE award of 49 North Atlantic Treaty Organization Fellowships in Science has been announced by the National Science Foundation and the State Department. The fellowship program, first instituted by NATO in 1959, is intended to promote the progress of science and to encourage a closer collaboration among scientists of various nations.

Fifteen awards were made in the life sciences, 33 in the physical sciences, including mathematics and engineering, and 1 in the social sciences. They are tenable at institutions in Australia (1), Belgium (2), France (6), the Federal Republic of Germany (6), Iceland (1), Israel (2), Italy (2), Sweden (3), Switzerland (2), the United Kingdom (22), and the United States (2).

Fellows, who must be U.S. citizens or nationals, receive a basic 12-month stipend of $5,000 and limited round-trip travel and dependency allowances. They were chosen from among 244 applicants. Panels of scientists, mathematicians, and engineers appointed by the National Academy of Sciences–National Research Council evaluated all applications, and the National Science Foundation, which administers the program on behalf of the State Department, made the final selection.

Plans of College Graduates To Be Studied

THE NATIONAL Opinion Research Center (NORC) of the University of Chicago will conduct a nationwide study to determine how many of the Nation's June 1961 college graduating class actually continue on to graduate work. The National Institute of Mental Health, a division of the U.S. Department of Health, Education, and Welfare, is sponsoring this study with an initial grant of $199,235 and with grants totaling $500,000 for annual studies of the graduates through 1964.

NORC will seek the reasons why different individuals choose different careers and why thousands of the Nation's brightest students do not enter graduate school. The present study will be a continuation of one conducted last April in which the center found that 77 percent of the Nation's 265,000 seniors planned eventually to attend graduate school and 30 percent indicated that they planned to do so this year. Previous studies indicate that an estimated 30 percent actually will enter graduate school. NORC estimates that at least 7,000 of the brightest students will not attend graduate school.

Procedures for NIH Fellowship Stipends Changed

EFFECTIVE July 1, 1962, colleges and universities providing fellowship training will be awarded a yearly fellowship allowance of $2,500 for each Public Health Service predoctoral fellow enrolled. The fellowship allowance will be in lieu of tuition and fees and will also cover other costs of research training formerly provided through the supply grant such as funds for travel to attend scientific meetings. Funds for the allowance, the fellow's stipend, his dependency allowance, and travel from his home will be paid directly to the institution, which will, in turn, pay the fellow under its own procedures.

Previously, funds to cover tuition, fees, and travel to school were paid directly to the fellow. A supply grant of up to $500 could be obtained by the fellow's sponsor on application and justification of a detailed budget. The new procedure is intended to broaden institutional responsibility in the administration of predoctoral fellowships. Each school will be asked to designate a key member of its administrative staff to serve as coordinating official for the program.

McMurrin—(*From page 6*)

that human reason is the most reliable instrument for solving human problems, and the commitment to the well-being of the individual as our noblest end. Today as never before we must cultivate the broadest human sympathies and a genuine identification with the whole of mankind. Our local and national isolations are gone and the provincial attitudes that arose from those isolations are doomed to die. The instruments of education must be employed to adequately prepare us for the new world-mindedness that must replace those attitudes.

It is a basic assumption of democracy that there is a coincidence of the good of the individual with the good of society, that the pursuit of the good of the individual will in some way contribute to the quality, stability, and strength of the society. It is now our task to justify that faith and by serving the high principles of a free society build a future whose course is determined by those who are true lovers of freedom and for whom the worth and dignity of the individual is the proper foundation of social policy and social action.

We must refuse to believe that the historic possibilities of our culture have all been laid before us. We must refuse to believe that the future is closed. We must refuse to believe, as the Marxists insist, that the course of history is determined and that the decline of our culture is inevitable. By the quality of our educational effort and by the force of our commitment and our determination we must justify a new confidence in our power to affect the future.

We must cultivate in our people such a sense of high vocation and high purpose, and so adequately equip them with knowledge, good will, and courage that they will not be frustrated or daunted by the monumental tasks that lie before us. Whether we like it or not, our enemy is deadly serious; his power is immense, and he is playing for keeps. Nothing less will do for us now than a new intellectual, moral, and spiritual vitality that will overwhelm the demonic forces of regimentation that are arrayed against us and establish the autonomy of freedom over the otherwise meaningless and destructive course of human history. Above all else, our commitment to the individual and his freedom must prevail. For those who have known the meaning of freedom, life on any other terms would not be worth the living.

NEW PUBLICATIONS

How To Obtain

(*1*) *Cost Publications: Send request, enclosing remittance (check or money order), to the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.*

(*2*) *Free Publications: Request direct from the Agency issuing them.*

From the Office of Education

Higher Education in the Philippines, by Arthur L. Carson. Washington, U.S. Government Printing Office, 1962. 251 p. $1. (OE–14065)

Inventory of Higher Education Physical Facilities, by E. Eugene Higgins and Mary B. Fuller. U.S. Department of Health, Education, and Welfare, Office of Education, Washington, February 1962. 7 p. (OE–51004–1)

The first of a physical facilities series designed to present preliminary information, as it becomes available, prior to the publication of the final report "Inventory of College and University Physical Facilities, December 31, 1957." Tables report distribution and estimated value, as of December 31, 1957, of higher education buildings by State, region, and control.

National Defense Graduate Fellowship Program: Your National Defense Graduate Fellowship. U.S. Department of Health, Education, and Welfare, Office of Education, Washington, March 1962. 8 p. (OE–55031)

Gives basic information on the program for use by recipients of these awards.

National Defense Student Loan Program: Studen Borrowers—Their Needs and Resources, by Robert C. Hall and Stanton Craigie. Washington, U.S. Government Printing Office, 1962. 80 p. 55 cents. (OE–55011)

Reports, chiefly in tabular form, on a nationwide inquiry into sources of income, curriculum choices, and vocational plans of National Defense student borrowers.

Projects Initiated Under Title VII, Part A, National Defense Education Act: July 1, 1958—June 30, 1961. U.S. Department of Health, Education, and Welfare, Office of Education, Washington, February 1962. 18 p. (OE–34013)

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Lists and briefly describes the research projects contracted for under the new educational media program during its first 3 years of operation.

Selected Information on Foundations and Their Grants, compiled by Kathryn G. Heath. Washington, U.S. Department of Health, Education, and Welfare, Office of Education, 1961. 6 p. (OE–14034–55)

Lists grants made by the Ford, Rockefeller, and W. K. Kellogg Foundations and by the Carnegie Corp. of New York for foreign projects and internationally related domestic projects to aid education, training, and related research.

State Directors of Junior Colleges and Coordinators of State Systems of 2-Year Colleges: Conference Proceedings, October 18 and 19, 1961. Washington, U.S. Department of Health, Education, and Welfare, Office of Education, 1962. 53 p. (OE–57003)

Contains workpapers and summaries of the discussions at a conference requested by the State directors of junior colleges and arranged by the Office of Education in cooperation with the Illinois Department of Public Instruction. The topics considered were: State criteria for the establishment of 2-year colleges; State and local surveys of need; suggested research related to the national image of the public community-junior college; financial support for 2-year colleges; State coordination of 2-year colleges with other educational institutions.

State Plans for Improving Statistical Services, compiled by Ivan N. Seibert, Jerry N. Waddell, and Louise R. Murphy. Washington, U.S. Government Printing Office, 1961. 173 p. 65 cents. (OE–20028)

Summarizes State plan provisions and program activities during the first 2 years' operation of title X of the National Defense Education Act.

Statistics of Higher Education 1957–58: Receipts, Expenditures, and Property, by Henry G. Badger. Washington, U.S. Government Printing Office, 1961. 131 p. $1. (OE–50023–58)

Chapter 4, section II, of the "Biennial Survey of Education in the United States, 1956–58."

Research Projects of the Cooperative Research Program: A Five-Year Summary, July 1, 1956–September 30, 1961. Washington, U.S. Government Printing Office, 1962. 79 p. 45 cents. (OE–12015)
See page 14.

From Other Government Agencies

A Directory of Federally Financed Student Loans, Fellowships, and Career Training Programs in the Field of Higher Education in the United States, Committee on Education and Labor, House of Representatives, 87th Cong., 2d. Sess. Washington, U.S. Government Printing Office, 1962. 54 p.

Lists and briefly describes 295 programs of federally financed assistance which are broad in scope and available to relatively large numbers of people. The directory is limited to higher education and does not include Federal participation in secondary, vocational, or adult education, nor does it include grants available to individuals for basic and applied research.

Manpower for Medical Research: Requirements and Resources, 1965–1970, prepared by Resources Analysis Section, Office of Program Planning, National Institutes of Health. U.S. Department of Health, Education, and Welfare, Public Health Service, 1962. 182 p. (See p. 17.)

A report for the Subcommittee on Departments of Labor and Health, Education, and Welfare and Related Agencies Appropriations of the Committee on Appropriations, House of Representatives.

U.S. GOVERNMENT PRINTING OFFICE: 1962